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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/600,145	07/10/2000	HIROKI NAKAHARA	9319S-000137	7749

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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/600,145

Applicant(s)

NAKAHARA ET AL.

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Amendment filed January 13, 2004.

Accordingly, claims 1 and 4 were amended, and claims 2, 5 and 7-16 were cancelled. Currently, claims 1, 3, 4 and 6 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 4 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 56-20927 (JP'927) in view of Burrell et al. (USPN 5,680,192).

As shown in Figs. 1a and 1b, JP'927 discloses a liquid-crystal display apparatus, comprising:

a first substrate 5 having:

a plurality of first substrate terminal 7 located adjacent to and aligned along a center portion of a first edge of said first substrate and extending linearly toward a second of said first substrate opposing said first edge (Fig. 1a); and

a first electrode pattern 6 electrically connected to said first substrate terminals;

a second substrate 1 having:

a plurality of first input terminal 9 located adjacent to and aligned along a first edge of said second substrate and extending linearly toward a second edge of said second substrate opposing said first edge of said second substrate;

a plurality of second substrate terminals 8 electrically connected to said first input terminals 9;

a plurality of second input terminals 4 located adjacent to and aligned along said first edge of said first substrate and extending linearly toward said second edge of said second substrate, the second input terminals having a first portion flanking one side of said first input terminal 9 and a second portion flanking another side of said first input terminal 9; and

a second electrode pattern 2 including a plurality of lines each electrically connected to a corresponding one of said second input terminal 4; and

a sealing member 10;

wherein said first substrate 5 and said second substrate 2 are located in an opposed manner through said sealing member so that the first substrate terminals 7 and said second substrate terminal 8 overlap each other as viewed in plan (Fig. 1b);

wherein said first substrate terminal 7 and said second substrate terminal 8 are electrically connected to each other with a conductive material 13 between said first and second portions of said second input terminal 4 (or sandwiched between said first substrate and said second substrate); accordingly, said electrical conduction of said first and second substrate terminals is performed at said central portion (or said electrical

connection is between portions of said second electrode pattern 2 flanking said second substrate terminal 8) (see Fig. 1a); and

wherein said first substrate terminal 7 for conduction between substrates and said second substrate terminal 8 for conduction between substrates linearly extend toward said second edges of said first and second substrates.

JP'927 discloses a liquid-crystal display apparatus that is basically the same as that recited in claim 4 except for a sealing member having a conductive material and the formation of the lines of the second electrode pattern 2.

As shown in Figs. 1-3, Burrell et al. discloses a liquid-crystal display apparatus comprising a first substrate 20, a second substrate 22, and a sealing member having a conductive material (col. 4, lines 39-45), the sealing member adhering the first and second substrates to each other and defining a liquid-crystal sealing area 24, wherein terminals 134 (transverse seal connectors) of the first substrate 20 and terminals 42 (contact pads) of the second substrate 22 are electrically connected to each other via the conductive material (col. 4, lines 39-48 and col. 5, lines 15-23).

Burrell et al. also discloses a first electrode pattern 16 formed on the first substrate 20 and a second electrode pattern 18 formed on the second substrate 22, wherein these electrode patterns are driven with opposite polarity voltages (col. 4, lines 48-60). As shown in Fig. 3, the lines of the second electrode pattern within the liquid-crystal sealing area each includes:

a first linear portion (extending from the terminal 42 at left) that extends linearly from where the line is electrically connected to the corresponding input terminal 138, the

first linear portion of each line extending for a different length than the first linear portion of other lines of the second electrode pattern;

an oblique portion 106 that slants obliquely from the first linear portion, a spacing between the lines of the second electrode pattern being narrower at the oblique portions than at the first linear portions;

a second linear portion 104 that extends linearly from the oblique portion toward the second edge of the second substrate 22; and

a second-edge parallel portion 102 that extends from the second linear portion parallel with the second edge of the second substrate.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid-crystal display apparatus of JP'927 with the teaching of Burrell et al. by providing a proper configuration for the lines of the electrode pattern to maximize the viewing area and avoid crossover black dots (col. 3, lines 1-6 and 30-35).

5. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 56-20927 (JP'927) in view of Burrell et al. (USPN 5,680,192) as applied to claims 1 and 3 above and further in view of Kobayashi (USPN 5,959,713) and JP 06-075240 A (JP'240).

The liquid-crystal apparatus of JP'927 as modified in view of Burrell et al. above includes all that is recited in claims 4 and 6 except for a driving IC. As shown in Figs. 3 and 4, Kobayashi discloses a first substrate terminal 8 and a first electrode pattern

formed on a first substrate 1; and a first input terminal 12, a second electrode pattern 7a and a second substrate terminal 21 formed on a second substrate 2,

wherein a driving IC 13 is mounted on the second substrate, said driving IC has an input terminal electrically connected to said first input terminal, and an output terminal 11 electrically connected to said second terminal for conduction between substrates and said second electrode pattern; and

wherein image data is supplied to said first electrode pattern, and a scanning signal is supplied to said second electrode pattern (col. 6, lines 36-46).

According to JP'240, due to increasing the density of the liquid crystal element, driving ICs are used in a so-called COG technology to improve the complicated wiring in the display (Abstract). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid-crystal display apparatus of JP'927 with the teaching of Kobayashi and JP'240 by employing a driving IC to improve the wiring of the display and hence, to reduce in size and weight of the display (Abstract).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



04/09/2004



DUNG T. NGUYEN
PRIMARY EXAMINER